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UNITED STATES DEPARTMENT OF AGRICULTURE

BUREAU OF ENTOMOLOGY AND PLANT QUARANTINE

Project

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Author

TITLE

REPORT OF PINE BEETLE SURVEY  
on the  
UMATILLA NATIONAL FOREST AND ADJOINING PRIVATE LANDS  
Season of 1943

by

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May, 1944

SUBJECT-

INDEX NO.-

U. S. Department of Agriculture  
Bureau of Entomology and Plant Quarantine  
Forest Insect Investigations

REPORT OF PINE BEETLE SURVEY  
on the  
UMATILLA NATIONAL FOREST AND ADJOINING PRIVATE LANDS  
Season of 1943

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## ABSTRACT

### Basis

Data presented are from the ninth (1943) annual pine beetle survey.

### Status of Infestation

The downward trend which began during 1939 continued unbroken through 1942 into 1943. In two centers on the Fossil area, infestation that was of a light epidemic nature in 1941 subsided to normal in 1942 and, with that, normal infestation became prevalent over the entire forest.

### Estimated Gross Losses for 1942

<u>No. of trees</u>	<u>Volume M.b.m.</u>	<u>Board ft. per acre</u>	<u>Percent of stand</u>
19,160	10,360	9	.23

### Recommendations

No direct control is necessary.

REPORT OF PINE BEETLE SURVEY  
on the  
UMATILLA NATIONAL FOREST AND ADJOINING PRIVATE LANDS  
Season of 1943

The ninth annual survey of forest insect conditions in the ponderosa pine stands within and adjacent to the Umatilla National Forest was conducted cooperatively by the Forest Service and the Bureau of Entomology and Plant Quarantine. Field work was carried on during the period from September 8 to 10, inclusive, by J. M. Whiteside, W. D. Badard, and W. J. Buckhorn of the Bureau of Entomology and Plant Quarantine. Cooperative funds were provided by the Forest Service.

Because of critical war time shortages and restrictions, the 1943 survey was limited to a 100-percent cruise of current losses on the 320-acre check plots. Of the five plots covered during 1942, four were again recruised. The fifth plot, Shelton, was omitted because logging was in progress. In its place the Troy plot, which was not covered in 1941, was substituted in order to provide an acceptable degree of coverage.

The 1943 survey completed the 1942 loss record on the plots and provided a partial record of the 1943 loss. Infestation trends were computed from these data and used, together with previous loss records, to estimate the 1942 losses occurring over the forest as a whole.

Estimates of the virgin stand acreage were again revised from records of cutting furnished by the Forest Service.

#### Results of the 1943 Survey

The infestation which had been steadily declining on the plots since 1939 continued to decrease during 1942. Losses dropped 48 percent below those of 1941, reaching the extremely low level of but 27 board feet per acre or 0.26 percent of the stand. Losses on a number of the plots probably have reached the lowest level that can be expected in a virgin stand. Individual plot data are given in Table 1.

Probably about 52 percent of the 1943 loss was perceptible at the time of the survey. On that basis it is estimated that a further decline of approximately 23 percent occurred during 1943.

Dendroctonus brevicornis continued to be the most important insect attacking ponderosa pine. However, in a large number of trees its attacks were associated with those of other beetles, chiefly Dendroctonus monticolae, Melanophila sp., and Ips sp.

The trend of infestation on the plots during the past eight years is shown graphically in Figure 1.

### General Forest Conditions

A general decline of infestation occurred over the entire forest during 1942. The center of light epidemic infestation, present during 1941 on the Hardman and Wall Creek units, declined to a normal status. In the stands of high beetle hazard on the west end of the Kinzua unit, logging operations brought under complete control a light epidemic infestation that in 1941 and 1942 showed a natural downward tendency. No center of above-normal infestation is now believed to exist on the forest. Estimates of the 1942 losses on the forest are given by areas and units in Table 2.

### Recommendations

In 1943 no conditions requiring direct control existed in the ponderosa pine stands of the Umatilla National Forest and the adjoining private land.

Table 1: Ponderosa pine killed by bark beetles on virgin sample plots -  
Umatilla National Forest and adjacent private lands.

Area and Unit	PLOT DESCRIPTION						ACTUAL 1942 LOSS				
	Plot	Town- ship	Range	Sec.	Timbered Acreage	Pine Volume B.m. (1/1/42)	No. of Trees	Volume B.m.	B.m. per Acre	Percent of Stand	Ratio to 1941
GRANDE RONDE Wenaha	Troy	5 N	42 E	9 S $\frac{1}{2}$	300	4,339,000	13	5,690	19	.13	.42
DALE Ukiah	Lucky Strike	4 S	32 E	13 W $\frac{1}{2}$	320	2,308,000	2	1,600	5	.07	.24
FOSSIL											
Wall Creek	Tupper	6 S	27 E	16 N $\frac{1}{2}$	210	2,189,000	9	6,470	31	.30	1.50
" "	Wilson Prairie	6 S	26 E	33 S $\frac{1}{2}$	285	3,475,000	16	15,270	54	.44	.61
" "	Stalling Butte	8 S	26 E	5 N $\frac{1}{2}$	235	1,932,000	4	7,930	34	.41	.36
	Total				630	7,596,000	29	29,670	47	.39	.58
GRAND TOTAL	5 Plots				1350	14,243,000	44	36,960	27	.26	.52

Table 2: Estimated insect-caused mortality of ponderosa pine by areas -  
Umatilla National Forest and adjacent private lands.

Area and Unit	PINE TYPE				GROSS 1942 LOSS				
	Virgin Acreage	Cutover Acreage	Total Acreage	Pine Volume M.b.m. (1/1/42)	No. of Trees	Volume M.b.m.	No. Trees per Section	B.m. per Acre	Percent of Stand
POMEROY									
Asotin	45,540	21,960	67,500	119,820	275	125	3	2	.10
Dayton	<u>23,130</u>	<u>24,070</u>	<u>47,200</u>	<u>122,500</u>	<u>210</u>	<u>95</u>	<u>3</u>	<u>2</u>	<u>.08</u>
Total	68,670	46,030	114,700	242,320	485	220	3	2	.09
GRANDE RONDE									
Wenaha	91,440		91,440	419,610	1,150	750	8	7	.18
Elgin	<u>4,580</u>	<u>45,540</u>	<u>50,120</u>	<u>81,950</u>	<u>190</u>	<u>95</u>	<u>4</u>	<u>2</u>	<u>.10</u>
Total	96,020	45,540	141,560	501,560	1,340	845	6	6	.17
PENDLETON									
Milton	13,240	8,360	21,600	52,920	50	20	2	1	.04
Mecham	49,220	18,600	67,820	225,510	340	135	3	2	.06
Pilot Rock	22,170	4,640	26,810	124,180	375	150	9	6	.12
Gurdans	19,450	1,720	21,170	185,200	645	290	19	13	.16
Rhea Creek	<u>19,670</u>	<u>6,240</u>	<u>25,910</u>	<u>164,430</u>	<u>725</u>	<u>325</u>	<u>18</u>	<u>13</u>	<u>.19</u>
Total	123,750	39,560	163,310	752,240	2,135	920	8	6	.12
LA GRANDE									
La Grande	8,240	62,320	70,560	88,550	370	150	3	2	.17
Starkey	<u>41,480</u>	<u>56,820</u>	<u>98,300</u>	<u>152,640</u>	<u>650</u>	<u>275</u>	<u>3</u>	<u>3</u>	<u>.18</u>
Total	49,720	119,140	168,860	241,190	1,020	425	3	3	.18
DALE									
Ukiah	60,260	9,500	69,760	458,690	1,100	550	10	8	.12
Ellis	<u>107,930</u>	<u>1,760</u>	<u>109,690</u>	<u>717,740</u>	<u>2,370</u>	<u>1,360</u>	<u>14</u>	<u>12</u>	<u>.19</u>
Total	168,190	11,260	179,450	1,176,430	3,470	1,910	12	10	.16
FOSSIL									
Hardman	46,990	8,000	54,990	407,510	2,720	1,630	32	30	.40
Wall Creek	109,250	1,560	110,810	654,710	3,490	2,100	20	19	.32
Kinzua	<u>49,710</u>	<u>69,370</u>	<u>119,080</u>	<u>578,400</u>	<u>4,500</u>	<u>2,310</u>	<u>24</u>	<u>19</u>	<u>.40</u>
Total	205,950	78,930	284,880	1,640,620	10,710	6,040	24	21	.37
GRAND TOTAL	712,300	340,460	1,052,760	4,554,360	19,160	10,360	12	9	.23

Figure 3.1.1

TREND OF CHECK PLOT LOSSES

MANILLA NATIONAL FOREST

GROSS PERCENT OF STAND KILLED

3.00

2.50

2.00

1.50

1.00

.50

0

1931

1932

1933

1934

1935

1936

1937

1938

1939

1940

1941

1942

YEARS

SPILKING

SPILKING

SPILKING